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ABSTRACT

Recent analyses of Russian (Halle 1963, Lightner 1972) have been forced by the criteria of rule "naturalness" and rule "generality" to posit highly abstract underlying forms. These underlying forms and rules are claimed to represent the speaker's competence. Such analyses are now being criticized (Derwing 1973, Hooper 1974) on the following grounds: (1) highly abstract forms cannot be present in the competence of unsophisticated speakers, whose knowledge of the language must be based solely on actually heard surface forms; and (2) speakers relate alternations which are not surface-phonetically motivated, to morphological facts, rather than attribute them to a sequence of opaque phonological rules. This paper presents a new analysis of Russian conjugation which shows that whereas certain alternations once were phonologically predictable, later changes destroyed the conditions of predictability, so that underlying forms and rules were accordingly restructured. Although underlying forms in the new analysis are less abstract, and the rules less natural and general, there is reason to doubt that naturalness and generality are valid criteria for synchronic rules. Evidence from dialects is introduced to support the new analysis, which will be aimed at meeting the criticisms of earlier analyses outlined above and will contribute to a description of the competence of a speaker of Russian. (Author)

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MORPHOLOGICAL RULES IN RUSSIAN CONJUGATION

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Morphological Rules in Russian Conjugation

Recent analyses of Russian verbs in the transformational generative framework, such as those of Halle (1963), Micklesen (1972), and Lightner (1972), have accounted for morphophonemic alternations in conjugation by positing abstract underlying forms from which surface forms are derived by maximally general phonological rules. These underlying forms and rules are claimed to represent the competence of the native speaker (what he knows in knowing his language). However, such analyses have been criticized, for instance by Derwing (1973), on the grounds that they cannot be supposed to represent the competence of unsophisticated speakers, especially children, whose internalized knowledge of their language must be based solely on actually heard surface forms. Keeping this controversy in mind, let us discuss two alternations which interact in Russian conjugation, the velar--palatal alternation and the e--o alternation. For these we will examine a phonologically based transformational generative analysis and a morphologically based analysis, comparing them as to abstractness of underlying forms and naturalness of rules. We will claim that the morphologically based analysis, in which there are no abstract underlying forms, provides a more plausible account of the speaker's competence. We will then introduce evidence from linguistic change (as represented by dialects) to support our claim.

Let us begin by considering the velar--palatal alternation in the present tense of 1st conjugation verbs, as in PEKÚ "I bake", PEČËT "he bakes" (forms in capital letters represent transliterations from Cyrillic). The present, past, and infinitive forms of this verb are shown below:

(1) Pres: PEKÚ "I bake" PEČËM "we..."
PEČËŠ' "you sg. bake" PEČËTE "you pl..."
PEČËT "he bakes" PEKÚT "they..."
Past masc. sg.: PËK "he baked"
Inf.: PEČ' "to bake"

Lightner, in his phonologically based transformational generative analysis of 1972, explains this alternation as coming from an underlying root-final -k- which becomes surface -č- by a rule of velar palatalization before front vowels,

abbreviated here as the k→č rule:

(2) Lightner's k→č rule (velar palatalization):
k→č / __front vowel

(This rule, in Lightner's analysis, follows his C→C' rule, by which consonants are palatalized before front vowels. His motivations for these rules and their relative ordering will not be discussed here.)

The k→č rule shown above is articulatorily natural (the velars assimilate frontness or palatality from the following front vowel) and historically attested (as the 1st velar palatalization), but to propose that this rule operates synchronically to derive the -č- of PEČËT from an underlying -k- leads to a problem: in PEČËT, -č- appears before a back vowel, -o-, not a proper environment for the operation of the k→č rule. Thus Lightner is forced to posit an underlying front vowel +e+ for the 1st conjugation present theme vowel (although it is never phonetically +e+ on the surface) in order to provide the proper phonological environment required by the k→č rule. Then, to derive the surface form PEČËT, the underlying theme vowel +e+ must be changed to its surface form +o+ by a later rule, e→o before hard (non-palatalized) consonants, so that Lightner derives PEČËT roughly as follows:

(3) Derivation of 3 sg. pres:

	pek+e+t
1. C→C'	p'ek'+e+t
2. k→č	p'eč'+e+t
3. e→o	p'eč'+o+t
	PEČËT

Underlying forms:
Root: pek+
Pres. theme 1: +e+

First, hard consonants are palatalized before front vowels, and k' goes to č' before the (front) theme vowel +e+, and then that +e+ goes to +o+ before the (hard) 3rd person marker +t. (Notice that the -e- of the root does not go to -o- because it precedes a soft consonant at the time the e→o rule applies.)

However, the rule e→o / __C, like the rule k→č, although articulatorily natural (the lack of palatality--backness--of the consonant is assimilated by the preceding vowel), and historically attested, causes problems as a synchronic

rule. In 2 pl. PEČETE, +e+ has apparently gone to +o+ before the soft 2 pl. marker +t'e. Since the e→o rule operates in the environment preceding a hard consonant, Lightner's rules do not yield the correct derivation of this form:

(4) Derivation of 2 pl. pres.:

	pek+e+te
1.C→C'	p'ek'+e+t'e
2.k→č	p'eč'+e+t'e
3.e→o	---
	(*PEČETE)

In order to preserve his phonological rule e→o / __C, Lightner is forced to apply his rules cyclically, so that the theme marker +e+ (but not the following person marker) is in the domain of the 1st cycle. Then, with the addition of final position to the environment of the e→o rule, Lightner ensures that the e→o rule will always apply to the theme vowel of the 1st conjugation, no matter what kind of consonant follows:

(5) Cyclic derivation of 2 pl. pres.:

	((pek+e)+e+te)	
1st cycle:	pek+e	
1.C→C'	p'ek'+e	
2.k→č	p'eč'+e	
3.e→o	p'eč'+o	(e→o / $_\begin{Bmatrix} C \\ \# \end{Bmatrix}$)
2nd cycle:	p'eč'+o+te	
1.C→C'	p'eč'+o+t'e	
2.k→č	---	
3.e→o	p'eč'+o+t'o	
	PEČETE	

(Independently motivated vowel reduction rules predict the correct surface pronunciation of the unstressed 2 pl/ personal ending.)

Notice that the rule C→C' is used to derive all surface palatalized consonants, even those such as p' in PEKÚ, PEČÉT etc. which never alternates with hard p in that root. Thus Lightner posits no underlying C' in his systematic

phonemic inventory (although the opposition C vs. C' is phonemic in Russian). This maximally general palatalization rule contributes to the high value of Lightner's analysis in the transformational generative framework, since the claim of transformational generative grammar is that the native speaker has actually internalized such abstract underlying forms and rules as Lightner posits above. This claim is based on the assumption that speakers prefer to analyze linguistic data by means of maximally general, exceptionless phonological rules, such as the palatalization of velars before front vowels (k→č) or the change of e→o before hard consonants (e→o), which can be expressed in terms of the fewest possible phonological features -- even if the cost of preserving such rules is, as we see above, highly abstract underlying forms and such mechanisms as a segmental cycle.[2] However, this basic assumption has been challenged, most notably by Derwing (1973), Vennemann (1972), and Hooper (1974), with a counterclaim that speakers do not choose to analyze morphophonemic alternations with phonological rules requiring abstract underlying forms; rather, they choose to analyze such alternations as morphologically based, with concrete (i.e., surface variant) underlying forms.[3] In line with this claim, we propose a morphologically based analysis of the PEKÚ, PEČËT type of alternation. For the surface forms shown in (1) above, we propose that the underlying form of the root is p'ok+ (this surface alternant occurs under stress, in the past tense), and that the underlying form of the 1st conjugation present theme is +o+ (this surface alternant also occurs under stress). The rule k→č in this analysis is a morphologically based one, changing k to č before the +o+ that is the present theme of the 1st conjugation, as follows:

(6) $k \rightarrow č \; / \; __ \; \left[\begin{smallmatrix} +o+ \\ \text{pres.} \\ \text{theme} \end{smallmatrix} \right]$

Thus the 3 sg. form PEČËT has the underlying form p'ok+o+t. 2 pl. PEČËTE, a problem for Lightner's e→o rule, is no problem in this analysis, as the present theme is underlyingly +o+ , and no e→o rule is necessary, as shown in the following derivations:

(7)

	3 sg. pres.:	2 pl. pres.:
	p'ok+o+t	p'ok+o+t'e
k→č	p'oč+o+t	p'oč+o+t'e
	PEČËT	PEČËTE

In this analysis the infinitive PEČ' is not derived from the root p'ok+. It is assumed that speakers do not derive p'eč from p'ok (or vice versa) but that these forms are listed separately in the lexicon. According to Hooper (1974), speakers relate such forms by a lexical redundancy ("via") rule of e→o before C (or o→e before C') but do not derive one from the other by phonological rules, since that would require abstract underlying forms (we note that Lightner derives PEČ' from pek+ti, which also necessitates a rule to derive -č- from -kt- before front vowel). The dialectal variant form of the infinitive, PEKČÍ, cited by Kuznecov (1960), is explained as having the underlying form p'ok+či, representing a generalization of the root p'ok+ over the whole paradigm. Notice also that this analysis allows underlying palatalized and palatal consonants and does not claim that they are derived even where they do not alternate with plain consonants on the surface.

This analysis seems more plausible as an account of the native speaker's competence for two reasons: first, its underlying forms include only actual surface alternants, which could be heard by a child acquiring the language; and second, its basic assumption is that speakers associate sounds with meanings, ascribing velar palatalization to present tense 1st conjugation and not to abstract phonologically based application of crucially ordered rules. In addition we can find convincing evidence for our solution in linguistic change.

At the earliest historical stage of Russian to be considered,[4] the present tense of the verb IDTÍ "to go" had the following surface forms:

(8)	Sg.:	Pl.:
1	idú	id'ém
2	id'éš'	id'ét'e
3	id'ét'	idút

Notice that the present theme vowel at this stage was +e+, and that consonants were predictably palatalized before front vowels by the rule C→C'.

Next, the e→o rule arose,[5] changing e to o before hard consonants, so that the present tense forms were now as follows:

(9)

	Sg.:	Pl.:
1	idú	id'óm
2	id'óš[6]	id'ét'e
3	id'ét'	idút

Notice that the present theme vowel +e+ is predictably changed to +o+ before hard consonants by the e→o rule, but that this change obscures the C→C' rule. Soft consonants can now appear before back vowels (id'óš, id'óm) as well as front vowels (id'ét', id'ét'e) on the surface.

Next in the northern dialects, 3rd person +t' hardened into +t.[7] This further change gave rise to the following present tense forms:

(10)

	Sg.:	Pl.:
1	idú	id'óm
2	id'óš	id'ét'e
(id'ét' →) 3	id'ét	idút

The change of +t' to +t obscures the e→o rule: now, -e- can appear before hard consonants (id'ét) as well as soft consonants (id'ét'e). In such a situation, one of two things may happen: rules may retain phonetic motivation (in which case they remain productive), or they may lose phonetic motivation (in which case they are either (a) lost or (b) morphologized.

Let us now examine the possibilities for the e→o rule. If the e→o rule had retained phonetic motivation and had remained productive, then when +t' became +t in the 3rd sg. pres., the theme vowel +e+ would have been changed to +o+ since the environemtn of the e→o rule would now have been met. This development would have caused the present tense of the verb IDTÍ to appear as follows:

(11) If rule e→o remains productive:

	Sg.:	Pl.:
1	idú	id'óm
2	id'óš	id'ét'e
3	id'ót	idút

But, in fact, no dialects exhibit the forms shown in (11).

However, if rule e→o had failed to retain phonetic motivation, it would have been lost or morphologized. The loss of rule e→o would cause the present tense of IDTÍ to appear almost identical to the historical stage shown in (8), before the rise of rule e→o:

(12) If rule e→o is lost:

	Sg.:	Pl.:
1	idú	id'ém
2	id'éš	id'ét'e
3	id'ét	idút

The forms in (12) show that, with the loss of rule e→o, the C→C' rule is no longer obscured, and palatalization is once again clearly phonologically motivated before front vowels. Indeed, several dialects exhibit such forms.[8]

The morphologization of the e→o rule, on the other hand, means that the present theme vowel morpheme is restructured as underlying +o+. The present tense forms would then be as follows:

(13) If rule e→o is morphologized:

	Sg.:	Pl.:
1	idú	id'óm
2	id'óš	id'ót'e
3	id'ót	idút

Palatalization is completely obscured, with both -d'- and -d- appearing before back vowels (idú, id'óš). The e→o process is also obscured (in fact, eradicated), since the present theme vowel is now +o+ everywhere. This leads to re-interpretation of the C→C' rule as morphologically motivated, so that consonants are palatalized root-finally in the morphological environment before present tense theme vowel +o+ . These forms in fact appear in Standard Russian and the majority of Russian dialects.

Thus evidence from linguistic change supports the claim that speakers prefer a morphological interpretation of alternations; speakers prefer to associate sounds with meanings. (Here it is relevant to repeat that no dialects reflect the development shown in (11), in which the e→o rule

retained its phonetic motivation and remained productive.) When phonetic motivation for a rule is obscured, the rule will either be lost or morphologized. In the majority of Russian dialects, morphologization took place. In the transformational generative analysis with a phonological interpretation of the alternations, shown in (5), the -o- in PEČËTE is a mere accident of abstract derivation, whereas in the morphologically-based analysis (shown in (7)) it is the predicted result of rule morphologization.

One more example, from Ukrainian, points up this difference clearly. In Ukrainian the verb PEKTI "to bake" has -č- all the way through the present tense, as shown below:

(14) Inf.: PEKTI "to bake"
Pres.: PEČU (1 sg.); PEČE (3 sg.); PEČUT (3 pl.)

No phonological explanation can be made for the presence of -č- before the 1st person marker +u. However, if velar palatalization is a morphological rule (as we have proposed in (6), a simple explanation is forthcoming: the environment of the rule has simply been extended from "before 1st conjugation present theme +o+" to "all through the present of the 1st conjugation", as follows:

(15) $k \rightarrow č \; / \; __ \left[\begin{matrix} \text{pres.} \\ 1 \end{matrix}\right]$

We have now seen that a phonologically based analysis, in addition to being implausibly abstract, failed to account for linguistic development as anything but accidental, whereas a morphologically based analysis was plausibly concrete and was the predictable result of speakers' choosing an analysis which carries out the function of language, that is, one which associates sound with meaning.

Footnotes

1. Lightner promises to discuss further problems of the e--o alternation in Problems of the Theory of Phonology, vol. II (to appear).
2. For a detailed analysis of the segmental cycle on Russian, see Thomas, L. K. (1974a) "On limiting the cycle in phonology -- data from Russian", PCLS, Parasession on Natural Phonology, X, University of Chicago, pp. 338-345, and (1974b) review of Lightner, T. M. Problems in the Theory of Phonology, vol. I, Linguistic Research, Inc., Edmonton, 1972.
3. "Concrete" forms here meet the Strong Naturalness Condition first proposed by Vennemann (1973), in "Phonological concreteness in natural generative grammar", Shuy and Bailey Toward Tomorrow's Linguistics, Georgetown University Press, Washington, D.C. According to the SNC, the underlying forms of non-alternating morphemes are identical to their phonetic representations, while for alternating morphemes, the underlying form must be one of the surface representations. Hooper has since proposed a weaker version of the SNC (the True Generalization Condition -- see Hooper (1975) "The archi-segment in natural generative phonology", Language, vol. 51, no. 3, pp. 536-560) in which a certain degree of abstractness is permitted in underlying forms of alternating morphemes, namely, that the segments of the underlying form must actually occur in one or more of the surface representations of the morpheme. Clearly, the question of limitations on abstractness in phonological description has not yet been resolved.
4. Old Russian, 11th century, as cited in Matthews (1960) Russian Historical Grammar, Athlone Press, London.
5. The e→o rule arose as early as the 12th century and did not subside until the 15th century (Matthews, op. cit., p. 165).
6. The 2 sg. person marker +š' hardened to +š̌ in the 14th century (Matthews, op. cit., p. 164).
7. The change of the 3 sg. person marker +t' to +t began in the north in the 14th century and continued through the 17th century (Matthews, op. cit., pp. 153-170).
8. Kuznecov, P. Russkaja Dialektologija, Gos. Uč-ped. Izd., Moskva, 1960, p. 50.

Bibliography

Derwing, B. (1973) Transformational Grammar as a Theory of Language Acquisition, Cambridge University Press, London.

Halle, M. (1963) "O pravilax russkogo sprjaženija", American Contributions to the Fifth International Congress of Slavists, Mouton, pp. 113-132.

Hooper, J. (1974) Aspects of Natural Generative Phonology, Indiana University Linguistics Club, Bloomington.

_____,(1975) "The archi-segment in natural generative phonology", Language vol. 51, no. 3, pp. 536-560.

Kuznecov, P. (1960) Russkaja Dialektologija, Gosudarstvennoe Učebno-pedagogiceskoe Izdatel'stvo Ministerstva Prosveščenija RSFSR, Moskva.

Lightner, T. M. (1972) Problems in the Theory of Phonology, vol. I, Linguistic Research, Inc., Edmonton.

Matthews, W. K. (1960) Russian Historical Grammar, Athlone Press, London.

Micklesen, L. R. (1972) "The structure of the Russian verb stem", The Slavic Word, ed. by Dean S. Worth, Mouton, pp. 261-275.

Thomas, L. K. (1974a) "On limiting the cycle in phonology -- data from Russian", Publications of the Chicago Linguistic Society, Natural Phonology, X, University of Chicago, pp. 338-345.

_____, (1974b) review of Lightner, T. M. Problems in the Theory of Phonology, vol. 1, Linguistic Research, Inc., Edmonton, Slavic and East European Journal, vol. 18, no. 3, pp. 334-338.

Vennemann, T. (1972) "Phonological uniqueness in natural generative grammar", Glossa 6, pp. 105-116.

_____, (1973) "Phonological concreteness in natural generative grammar", Shuy, R. and C.-J. Bailey Toward Tomorrow's Linguistics, Georgetown University Press, Washington, D.C.